

IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF ALABAMA
EASTERN DIVISION

HAROLD A. LEDBETTER, as)	
Administrator of the Estate of)	
Annie P. Thrash, Deceased,)	
)	
Plaintiff,)	CASE NO. 3:09-CV-843-WKW [WO]
)	
v.)	
)	
BLAIR CORPORATION, <i>et al.</i> ,)	
)	
Defendants.)	

MEMORANDUM OPINION AND ORDER

This products liability action arises out of the tragic death of seventy-year-old Annie Thrash, who on October 30, 2008, while alone in her apartment, was fatally burned when the 100% cotton chenille robe she was wearing somehow ignited. How the robe ignited and why are critical issues for determining the liability, if any, of Defendant Blair, LLC (“Blair”), which marketed and sold the chenille robe.¹ Multiple expert witnesses have been engaged on both sides to unravel the clues. Before the court are motions that seek to exclude part or all of the testimony of seven of those expert witnesses, pursuant to the standards of Federal Rule of Evidence 702 and

¹ Defendant Blair, LLC, is formerly known as Blair Corporation. (Doc. # 66.)

Daubert v. Merrell-Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993).² (See Docs. # 169, 170, 171, 172, 174.) The motions have been fully briefed and are ready for disposition. The court's rulings follow.

I. JURISDICTION AND VENUE

Subject matter jurisdiction is exercised pursuant to 28 U.S.C. § 1332(a). Personal jurisdiction and venue are not contested, and there are adequate allegations of both.

II. STANDARD OF REVIEW

The admissibility of expert testimony is governed by Rule 702 and *Daubert*, and its progeny. Rule 702 provides:

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:

- (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
- (b) the testimony is based on sufficient facts or data;
- (c) the testimony is the product of reliable principles and methods; and
- (d) the expert has reliably applied the principles and methods to the facts of the case.

Fed. R. Evid. 702.

² Specifically, this Memorandum Opinion and Order addresses Plaintiff's motion to exclude the testimony of defense experts, Stephen Boudreau, Clyde T. Canter, C. A. Robinson, and Kenneth Kulig, and Blair's motion to exclude the testimony of Joseph Burton, Bill Harris, and James Munger, three of Plaintiff's experts. Plaintiff's motion to exclude the testimony of defense expert, Gordon Damant, will be addressed later in a separate order.

In *Daubert*, the Supreme Court made it clear that Rule 702 assigns the trial court a gatekeeping role to “ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable.” *Daubert*, 509 U.S. at 589 & 597; *see also Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 141 (1999) (“[T]he Federal Rules of Evidence ‘assign to the trial judge the task of ensuring that an expert’s testimony rests both on a reliable foundation and is relevant to the task at hand.’” (quoting *Daubert*, 509 U.S. at 596)). This gatekeeping responsibility is the same when the trial court is considering the admissibility of expert technical evidence. *Kumho Tire*, 526 U.S. at 147.

In the Eleventh Circuit, expert testimony is admissible under Rule 702 if it satisfies three broad requirements:

(1) the expert is qualified to testify competently regarding the matters he intends to address; (2) the methodology by which the expert reaches his conclusions is sufficiently reliable as determined by the sort of inquiry mandated in *Daubert*; and (3) the testimony assists the trier of fact, through the application of scientific, technical, or specialized expertise, to understand the evidence or to determine a fact in issue.

United States v. Frazier, 387 F.3d 1244, 1260 (11th Cir. 2004) (quoting *City of Tuscaloosa v. Harcross Chems., Inc.*, 158 F.3d 548, 562 (11th Cir. 1999)). These requirements are known as the “qualifications,” “reliability,” and “helpfulness” prongs. *See id.*

When evaluating the reliability of scientific expert testimony, the trial judge must assess “whether the reasoning or methodology underlying the testimony is scientifically valid and . . . whether that reasoning or methodology properly can be applied to the facts in issue.” *Daubert*, 509 U.S. at 592–93. Factors that may bear on the reliability of expert testimony include (1) whether the expert’s theory can be and has been tested, (2) whether the theory has been subjected to peer review and publication, (3) whether the known or potential rate of error of the methodology is acceptable, and (4) whether the theory is generally accepted in the proper scientific community. *McDowell v. Brown*, 392 F.3d 1283, 1298 (11th Cir. 2004) (citing *Daubert*, 509 U.S. at 593–94). These factors are not definitive, but will vary depending on the case. Indeed, the trial court has “considerable leeway in deciding in a particular case how to go about determining whether particular expert testimony is reliable.” *Kumho Tire*, 526 U.S. at 152. At the same time, the trial court must remain mindful that “*Daubert* does not require certainty; it requires only reliability.” *Hendrix ex rel. G.P. v. Evenflo Co.*, 609 F.3d 1183, 1198 n.10 (11th Cir. 2010). The focus of reliability “must be solely on principles and methodology, not on the conclusions that they generate.” *Daubert*, 509 U.S. at 595.

Moreover, whether the expert testimony will assist the trier of fact in understanding the evidence or a fact in issue “goes primarily to relevance.” *Daubert*,

509 U.S. at 591. “Expert testimony which does not relate to any issue in the case is not relevant and, ergo, non-helpful.” *Id.* (citation and internal quotation marks omitted). The Fifth Circuit said it this way: Assisting the trier of fact means that “the trial judge ought to insist that a proffered expert bring to the jury more than the lawyers can offer in argument.” *Salas v. Carpenter*, 980 F.2d 299, 305 (5th Cir. 1992).

In the end, however, the court’s gatekeeping role under *Daubert* “is not intended to supplant the adversary system or the role of the jury.” *Allison v. McGhan*, 184 F.3d 1300, 1311 (11th Cir. 1999). Where the basis of expert testimony satisfies Rule 702, “[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking [debatable] but admissible evidence.” *Daubert*, 509 U.S. at 596.

III. BACKGROUND

In the dark, early morning hours of October 30, 2008, a resident of apartment 3-E at Arbor Place Apartments was awakened by smoke and called 911. The first responders on the scene were the Opelika Police Department and the Opelika Fire Department. Apartment 3-E was inspected. There was light smoke, but no fire. Next door, at apartment 3-D, however, the front door was hot to the touch. The police made a forcible entry into apartment 3-D, and were met by heavy smoke and heat.

Firefighters followed, with hose in tow, and doused the flames that had flared up from the sofa when the door was opened. A body was found lying supine on the floor between the coffee table that adjoined the burned sofa and the television. The victim was Annie Thrash. The burns were fatal, covering 70 to 80 percent of her body. The 100% cotton Blair chenille robe and pajamas she had been wearing were burned off; only tattered remnants remained, and those remnants were virtually unrecognizable.

The heaviest smoke damage was in the living room, but the fire damage was contained primarily to the sofa. It was determined that the initial fire most likely depleted the oxygen, causing the fire to extinguish itself and preventing its spread to other areas. The heat nonetheless was lethal. Although not burned, Ms. Thrash's Chihuahua was found dead in its bed in Ms. Thrash's bedroom. Temperatures inside the apartment reached 500 degrees Fahrenheit, which was more than sufficient to melt and silence the smoke alarm in the hallway going to the bedroom.

Precisely what Ms. Thrash was doing moments before the fire ignited is not known. There were no eyewitnesses. There are some clues, however, from the apartment itself. For instance, cold water was running in the kitchen sink. A pot filled with water was atop the gas stove burner that was in the "on" position emitting natural gas, but not burning, and there was a strong odor of natural gas in the kitchen. Additionally, information about Ms. Thrash was garnered from her friends and family.

That information – such as that she often slept on the sofa to alleviate back pain, that she was a non-smoker, and that she was, as her neighbor said, “early to bed, and early to rise” – has been given varying degrees of importance by the parties in trying to piece together the final moments in Ms. Thrash’s life.

The experts retained by Plaintiff and Blair, not surprisingly, disagree about how the fire started and what caused Ms. Thrash’s death. Plaintiff, as the executor of his mother’s estate, brings this suit on the theory that Ms. Thrash was in the kitchen preparing her breakfast when she reached over the gas stove, and her robe caught fire from the flames on the gas stove burner. The robe engulfed Ms. Thrash in flames, making her a human torch. Ms. Thrash fled the kitchen, passed through the small dining room, and went into the living room, where she fell to the floor, and the burning robe ignited the sofa as she passed by it. Plaintiff’s theory rests on grounds that the Blair robe Ms. Thrash was wearing was unreasonably dangerous in that it was highly flammable and contained a design defect in that the long sleeve, eight button, loose-fit design made it more susceptible to cooking fires. Based on this theory, Plaintiff brings claims alleging a violation of the Alabama Extended Manufacturer’s Liability Doctrine, negligent failure to warn and/or conduct a timely recall, and wantonness. (Doc. # 55.)

Blair filed an answer denying all material allegations and asserting certain defenses. (Doc. # 66.) Blair also retained its own experts who opine that Plaintiff's theory cannot be substantiated. Those experts opine, for example, that it cannot be proven that the fire ignited in the kitchen, rather than at the sofa. They also surmise that Ms. Thrash's ability to escape the fire was hampered by her use of prescription and over-the-counter drugs revealed by the postmortem toxicology results. Those drugs included several prescriptions that act as sedatives, including Carisoprodol (a muscle relaxant sold under the trade name Soma), Hydrocodone, and Zolpidem (a sleep aid, commonly known as Ambien), all lawfully prescribed by Ms. Thrash's physicians to treat her various maladies. Her toxicology report also establishes the presence of Diphenhydramine, also known as Benadryl.

IV. DISCUSSION

The parties have filed several motions focused on the exclusion of expert testimony. (Docs. # 163, 169, 170, 171, 172, 174.) Plaintiff moves to exclude the testimony of four of Blair's designated expert witnesses: (1) Stephen Boudreau; (2) Clyde T. Canter; (3) C. A. Robinson; and (4) Kenneth Kulig. Blair moves to exclude the opinions and testimony of four of Plaintiff's designated experts:

(1) Joseph Burton; (2) Bill Harris; (3) James Munger; and (4) Gordon Damant.³ The parties' motions contend generally that some or all of the expert testimony proffered is inadmissible under the standards of *Daubert* and Rule 702. Each motion will be addressed separately below, but in general terms the topics relate to Ms. Thrash's lawful use of prescription and over-the-counter medicines and the effect of that use on Ms. Thrash's ability to prevent or escape the fire, the cause and origin of the fire, and the flammability of the robe.

A. Plaintiff's *Daubert* Motions to Exclude Defense Expert Testimony

1. Stephen Boudreau

Stephen Boudreau, M.D., is the coroner with the Alabama Department of Forensic Sciences who performed the autopsy on Ms. Thrash. Plaintiff moves to exclude any testimony from Dr. Boudreau that Ms. Thrash's legal use of several prescribed and over-the-counter drugs may have played a part in her death by hindering her ability to react to the fire that took her life. In response, Blair concedes that, pursuant to the standard set forth in *Daubert*, Dr. Boudreau cannot testify specifically whether Ms. Thrash was impaired on the day of her death as a result of the drugs measured in her postmortem bloodstream. Plaintiff's motion does not

³ As stated, Plaintiff's motion to exclude Mr. Damant's testimony will be taken up later in a separate order.

extend to any other aspect of Dr. Boudreau's testimony, and Blair's concession is limited likewise to that sole topic. Accordingly, Plaintiff's motion to exclude (Doc. # 169) is due to be granted.

2. *Clyde T. Canter*

Mr. Clyde T. Canter, whose degree is in chemistry, is a consultant specializing in the flammability of fabrics. Plaintiff argues that Mr. Canter steps outside his area of expertise in offering opinions as to the cause and origin of the fire. Blair concedes this much, asserting that Mr. Canter will not offer any opinions as to how the fire started in Ms. Thrash's apartment. As the admissibility of Mr. Canter's opinion on this discrete issue is no longer at issue because the motion is unopposed, Plaintiff's motion to exclude (Doc. # 172) is due to be granted as to testimony from Mr. Canter on the cause and origin of the fire, but otherwise is due to be denied.

3. *C. Andrew Robinson*

Blair intends to call C. Andrew Robinson, Ph.D., as an expert in forensic toxicology. Dr. Robinson received a doctorate in biochemistry from the University of Alabama at Birmingham, and has thirty-eight years of experience interpreting drug concentrations in patients. He currently is a forensic toxicologist for the Jefferson County medical examiner's office, and has been employed in that capacity since 1991. Dr. Robinson has been published extensively in the field of toxicology and has been

the recipient of many honors and awards. His credentials in the field of forensic toxicology are impressive.

In his expert report, Dr. Robinson offers an opinion that the concentrations of medications found in Ms. Thrash's postmortem blood would have left her dizzy, sleepy, and confused, and unable to think rationally or react promptly to the fire. Plaintiff advances three arguments for excluding Dr. Robinson's testimony. First, while Plaintiff does not contest Dr. Robinson's qualifications generally to render opinions in the field of forensic toxicology, he argues that Dr. Robinson is not qualified and lacks experience to testify that Ms. Thrash specifically was impaired by prescription and over-the-counter drugs when the fire ignited. In other words, he challenges Dr. Robinson's qualifications to interpret what effect these drug concentrations would have had on Ms. Thrash's functioning at the time of death. Second, Plaintiff argues that the methodology Dr. Robinson used to reach his conclusion does not satisfy the standard of reliability required by *Daubert*. The crux of this argument is that, without the benefit of clinical observations pertaining to Ms. Thrash's tolerance level and her reaction to the drugs she was taking or other knowledge of the effects of the drugs on her specifically, the concentrations of drugs in Ms. Thrash's postmortem blood do not provide a reliable method for assessing Ms. Thrash's antemortem level of impairment in the minutes preceding her death. Third,

Plaintiff asserts that Dr. Robinson's opinion, distilled to its essence, consists merely of a review of the warning labels and package inserts for each of Ms. Thrash's prescriptions and, thus, would not be helpful to the jury.

For the reasons to follow, Dr. Robinson will not be permitted to testify as to Ms. Thrash's specific impairment. During his deposition, which was taken after the submission of his expert report, Dr. Robinson testified that his opinions regarding impairment were based upon the side effects that the general population would have experienced with the same level of drug concentrations identified in Ms. Thrash's postmortem blood. He explained that he was not opining as to the specific effect that the combination of prescriptive and over-the-counter drugs had on Ms. Thrash on the day in question:

- Q. So the opinions that you've given in your report are generalized opinions, not specific to Ms. Thrash?
- A. They are opinions on what these drugs cause.
- Q. Not specific to Ms. Thrash?
- A. Correct.
- Q. [T]here's no way for you to give, based on this information, the toxicological analysis, any opinion regarding the effect that these medications had on Ms. Thrash on the day of her death?
- A. Specifically?
- Q. Yes.
- A. Correct.
- Q. So, whether or not she was confused or dizzy or drowsy or alert and unable to sleep, you can't say, can you?
- A. Correct.

(Robinson's Dep. 70–71; *accord* Robinson's Dep. 30–31, 34–35, 38–39, 67–68.)

The court interprets this testimony as a concession by Dr. Robinson that he cannot opine specifically on Ms. Thrash's impairment. Blair has not offered a different interpretation of Dr. Robinson's deposition testimony, or argued to the contrary. Accordingly, Dr. Robinson will not be permitted to testify that Ms. Thrash was dizzy, sleepy and confused to the point of being unable to think rationally and to react promptly to the fire. This is not a wholesale exclusion of Dr. Robinson's testimony, however.

There are multiple additional opinions offered by Dr. Robinson. Dr. Robinson will be allowed to testify as to other of his opinions, including those regarding (1) the reliability of postmortem toxicology performed on peripheral blood,⁴ (2) the concentrations of drugs in Ms. Thrash's postmortem blood, (3) whether these concentrations were at, below or above therapeutic levels, (4) whether these concentrations reveal recent ingestion, (5) the known side effects of the drugs on the general population, including the known side effects of the drugs at concentrations and combinations identified in Ms. Thrash's postmortem blood; (6) the drugs'

⁴ For example, Dr. Robinson has observed that "peripheral blood is the preferred sample of choice in postmortem cases because drug levels from peripheral blood are less affected by postmortem redistribution" (Robinson's Report 3), and there is undisputed evidence, which includes Dr. Robinson's testimony, that peripheral blood samples were extracted from Ms. Thrash during the autopsy (Robinson's Dep. 77). He further opines that "toxicology performed on peripheral blood is reliable" (Report 4.) These opinions are not the subject of Plaintiff's *Daubert* challenge. Rather, as discussed *infra*, Plaintiff offers a competing expert, Dr. Joseph Burton, who critiques the use of postmortem toxicology for determining drug impairment.

intended effects (for example, Zolpidem is “designed to cause drowsiness”), (7) the general warnings given regarding these drugs, and (8) the typical interactions of the drugs when taken together or, in other words, the additive or synergistic effects of the drugs on the general population. The requirements of *Daubert* and Rule 702 are satisfied as to these opinions.⁵

Dr. Robinson’s opinions, listed above, have been formulated in a scientifically sound and methodologically reliable fashion. Any weaknesses in the reliability of Dr. Robinson’s methodology as to these opinions go to the weight of the evidence, not to its admissibility. To the extent that Dr. Robinson’s opinions have gaps, Plaintiff may counter those opinions through cross-examination and the presentation of contrary evidence. *See Daubert*, 509 U.S. at 596. Additionally, Plaintiff has designated a rebuttal expert witness to refute Dr. Robinson’s methodology (S. Rutherford Rose), and will be permitted to call Dr. Rose for purposes of rebuttal, if a proper foundation is laid. *See In re Cessna 208 Series Aircraft Prods. Liab. Litig.*, No. 05-md-1721-KHV, 2009 WL 1649773, at *1 (D. Kan. June 9, 2009) (“Numerous courts have permitted experts to testify at trial about the reliability of the opinions of opposing experts.” (collecting cases)). In this case, as to methodology, the court finds

⁵ If proper for impeachment or another appropriate purpose, Dr. Robinson will be allowed to testify that Plaintiff’s expert, Dr. Burton, made gross mathematical errors when converting the different units of measurement of drug concentrations to analyze the amount of each drug in Ms. Thrash’s blood.

that “[a] trial setting . . . will provide the best operating environment for the triage [that] *Daubert* demands.” *Rafaela Cortes-Irizarry v. Corp. Insular De Seguros*, 111 F.3d 184, 188 (1st Cir. 1997).

His opinions are not, as Plaintiff says, a mere “reading [of] the warning labels.” (Doc. # 170, at 13.) Prescription drugs are complex medicines and vary in their intended purpose, side effects, and use. Dr. Robinson’s opinions take into account the specific concentrations of the drugs found in Ms. Thrash’s postmortem blood and, based upon those concentrations, he opines what effect those drugs would have on the general population when taken individually and/or in combination. (Robinson’s Dep. 31–32.) His opinions rely upon an interpretation of the data in the toxicology report, the units of measurements for blood concentrations of the drugs, and an analysis of therapeutic levels of the drugs at issue. These are matters beyond the understanding of an average layman. *See United States v. Frazier*, 387 F.3d 1244, 1262 (11th Cir. 2004).

Accordingly, Plaintiff's motion to exclude (Doc. # 170) is due to be granted as to Dr. Robinson's testimony relating to Ms. Thrash's impairment specifically.⁶ The motion is otherwise due to be denied.

4. Kenneth Kulig

Dr. Kenneth Kulig is a medical toxicologist with thirty years of experience, who is board certified in both medical toxicology and emergency medicine. Dr. Kulig opines, similar to Dr. Robinson, that Ms. Thrash was impaired by her medications such that her ability to prevent and react to the fire would have been slower and less effective. He concludes that the concentrations of multiple sedating drugs measured

⁶ Blair argues, however, that to exclude Dr. Robinson's testimony that Ms. Thrash was impaired would be tantamount to requiring him to establish his opinion with scientific certainty, a standard not mandated by *Daubert*. As support for this argument, Blair relies upon *Ruiz Troche v. Pepsi Cola of Puerto Rico*, 161 F.3d 77 (1st Cir. 1998), which held that the district court applied too stringent of a standard when it excluded a pharmacologist's opinion that the deceased's level of cocaine intoxication, as reported in postmortem toxicology report, would have impaired his ability to drive safely. The First Circuit held that the trial court "imposed a threshold requirement that science be able to declare that a precise quantity of cocaine in the bloodstream produces an equally precise degree of impairment." *Id.* at 86. "This requirement solicits a level of assurance that science realistically cannot achieve." *Id.*

First, it should be noted that in *Ruiz*, the First Circuit did not rule on the admissibility of the pharmacologist's impairment testimony, but held that the cumulative effect of other fundamental errors pertaining to the exclusion of the toxicology report and the pharmacologist's dosage testimony required a new trial and that the trial court revisit anew the admissibility of the impairment testimony. Second, the exclusion of Dr. Robinson's testimony is narrow. He is only excluded from testifying that, at the time of the fire, Ms. Thrash specifically was dizzy, sleepy, and confused, and not able to think rationally or to react promptly. That exclusion is based upon Dr. Robinson's testimony that his opinions are generalized opinions on the effects of these drugs in the general population and are not specific to Ms. Thrash. His testimony was not excluded on the basis of a failure to satisfy a standard of scientific certainty, but, rather, on the confines of his expertise as conceded by him. Third, unlike in this case, there was a wholesale exclusion of any evidence of the deceased's cocaine use. The jury knew nothing about it. In this case, Dr. Robinson will be permitted to testify about the toxicology results indicating prescription drug use, the concentrations of the drugs in Ms. Thrash's postmortem blood, and the jury also will hear about how the general population reacts to those drugs in similar concentrations and combinations.

in Ms. Thrash's blood simultaneously, including Zolpidem (which is intended specifically to induce sleep), is evidence of impairment. Dr. Kulig also opines that the blood concentration of Soma was high enough to indicate probable impairment. (Kulig's Dep. 69–70.)

Plaintiff does not challenge Dr. Kulig's qualifications generally to render opinions in the field of medical toxicology, and appropriately so. He is well credentialed. Rather, Plaintiff argues that Dr. Kulig's methodology of determining impairment is not scientifically valid as required by *Daubert*. Plaintiff's challenge is similar to the one he lodged against Dr. Robinson's testimony. Plaintiff argues that because Dr. Kulig did not treat Ms. Thrash, he has no reliable information pertaining to her tolerance levels or her reaction to the drugs she was taking. Plaintiff argues that, without the benefit of clinical observations, the concentrations of drugs in Ms. Thrash's postmortem blood do not provide a reliable basis for assessing her level of impairment in the minutes preceding her death. Plaintiff's contention is that impairment cannot be determined solely from postmortem plasma. Coinciding with these objections to Dr. Kulig's methodology is the argument that Dr. Kulig did not have sufficient facts and data upon which to base his opinion. *See Fed. R. Evid.* 702(b); (*see also* Doc. # 194 at 56–57 (arguing that Dr. Kulig's opinion that Ms.

Thrash was impaired is “junk science” because of the absence of reliable facts and data to form his opinion).)

Having reviewed the submissions and arguments relevant to Dr. Kulig’s testimony, the court finds that a sufficient demonstration has been made that Dr. Kulig’s methodology is reliable and based upon adequate facts and data. He based his opinion on multiple sources. Those sources included, among others, Ms. Thrash’s prescription records, her medical records, the depositions of her treating physicians, the Opelika Fire Department report, and the autopsy report. (Kulig’s Report 1–2 (listing documents he reviewed); Kulig’s Dep. 55–56.) This evidence belies Plaintiff’s assertion that Dr. Kulig relied solely on Ms. Thrash’s postmortem toxicological results to formulate his opinions.

Moreover, his opinions are based on data that included the postmortem blood drug concentrations revealed by the toxicology report, the ranges of therapeutic blood concentrations for the drugs at issue (taken from peer-reviewed literature), and a chronology of Ms. Thrash’s medication history that he generated. His opinions further are based upon his education, his years of practice in the fields of medicine and toxicology, and his experience as a medical professional in diagnosing causes of death and impairment. Notably, he provides that he routinely interprets toxicology laboratory studies where he correlates blood concentrations of drugs with the clinical

condition of the patient, including mental and physical impairment. Hence, his qualifications include substantial experience in evaluating patients in a clinical setting to determine levels of impairment. Indeed, his opinion that the concentrations of Soma alone found in Ms. Thrash's postmortem blood were high enough to impair her is based in part upon his own clinical observations of patients on that drug. (Kulig's Dep. 70.) Also unpersuasive is Plaintiff's criticism of the fact that Dr. Kulig does not know exactly what Ms. Thrash was doing when she caught fire.

The court has not overlooked the areas that Plaintiff has identified as weaknesses in Dr. Kulig's methodology. Plaintiff focuses on the lack of Dr. Kulig's clinical observations, and Dr. Kulig concedes that the best method for determining a patient's level of impairment caused by a prescriptive medicine is "to observe the patient to determine the [drug's] effect firsthand" (Kulig's Dep. 40), and that is part of his practice as a medical toxicologist. However, Dr. Kulig says that the clinical setting is not the only way to assess impairment, and that in his profession, he is often called on to interpret postmortem drug concentrations and correlate those results with impairment and/or cause of death. He explains that impairment can be assessed without clinical observation based upon the type of sources, data, facts, studies and literature of the type in this case. It can be determined that one side effect is less likely than another depending on the drug concentration ranges.

Plaintiff also points to Dr. Kulig's admission that he did not have "the kind of detail that [he] would normally like to see" to assess whether Ms. Thrash had developed a tolerance to any of her medications.⁷ Plaintiff says the methodology is flawed due to a lack of clinical observations, the pitfalls of postmortem redistribution ("PMR") in blood analysis of drug concentrations,⁸ *see infra*, and Mr. Kulig's inability to pinpoint when Ms. Thrash took her final dosages of the drugs. These alleged flaws in Dr. Kulig's methodology do not demonstrate a lack of scientific validity. They go merely to the weight, not the admissibility, of the testimony, and present appropriate subjects for cross-examination.

Based on the foregoing, Dr. Kulig will be permitted to testify that the likely effect of the drugs would have been that Ms. Thrash was impaired by her medications such that her ability to prevent and react to the fire would have been slower and less effective. Based upon his admission, however, he will not be allowed to testify as to the degree of her impairment or, in other words, how much her ability to react would

⁷ It is clear, however, that Dr. Kulig was able to weigh tolerance, at least to some extent, in formulating his opinions. For example, he explained that he did not believe that Ms. Thrash had developed any tolerance to Ambien because she had only been taking it for one week prior to her death. (Kulig's Dep. 75–76.)

⁸ Plaintiff does not raise the issue of PMR in the context of his *Daubert* motion challenging Dr. Kulig's testimony; however, he does so indirectly by proffering Dr. Burton as an expert to testify that PMR invalidates postmortem toxicology readings of drug concentrations. Plaintiff's arguments pertaining to PMR are discussed later in this opinion in relation to the challenges to Dr. Burton's testimony.

have been affected by the drugs at issue. Accordingly, Plaintiff's motion to exclude is due to be granted as to the degree of Ms. Thrash's impairment, but denied as to Dr. Kulig's opinion that Ms. Thrash was impaired by her medications such that her ability to prevent and react to the fire would have been slower and less effective.

B. Blair's *Daubert* Motions to Exclude Plaintiff's Expert Testimony

1. Joseph Burton

Joseph Burton, M.D., a medical doctor and forensic pathologist, has offered opinion testimony on the following topics: (1) the cause and origin of the fire; (2) the robe's flammability; (3) PMR; and (4) drug impairment. Blair moves to exclude testimony on all four topics. (Doc. # 174.) Plaintiff responds that Dr. Burton will not offer expert opinions in the areas of cause and origin of the fire or expert opinions pertaining to the flammability of the robe. Accordingly, Blair's motion to exclude Dr. Burton's testimony is due to be granted as to topics (1) and (2).

Topics (3) and (4) require more discussion. The challenges to Dr. Burton's opinions on PMR and drug impairment focus on Dr. Burton's qualifications and his methodology.

a. Qualifications

The crux of Blair's challenge to Dr. Burton's qualifications is that he is not a toxicologist. Blair contends that Dr. Burton, as a physician and forensic pathologist, lacks the necessary education, training, and experience to testify as an expert in the area of toxicology and that, therefore, he is not qualified to render opinions on PMR or therapeutic levels of postmortem concentrations of drugs. Plaintiff emphasizes, as Dr. Burton has pointed out in his deposition and affidavit, that the role of a pathologist is to interpret toxicology reports and assess whether the toxicology findings played a role in injury causation or death, and that he has extensive qualifications in this area. Dr. Burton admits that he is not a certified toxicologist, but argues that he does not have to be to give an opinion on the effects of toxicology on an individual's injury or death.

The court finds that Dr. Burton's credentials qualify him to testify about the effects of toxicology on human beings. In addition to the degrees he holds in medicine and forensic pathology, Dr. Burton is qualified based upon the more than 20,000 autopsies he has performed or supervised, his decades of experience as chief medical examiner for the Atlanta metropolitan area, and his consulting work in some 5,000 cases where he was asked to determine injury causation and/or cause of death. His qualifications are proper subjects for scrutiny on cross-examination; however, as

one court has found, a finding with which this court agrees, “[t]he distinction between a pathologist and a toxicologist . . . goes more to the weight of the testimony rather than its admissibility.” *Evans v. Toyota Motor Corp.*, No. V-03-09, 2005 WL 3454456, at *4 (S.D. Tex. Aug. 9, 2005); *see also Weinstein v. Siemens*, No. 2:07–CV–15000, 2010 WL 4825205, at *9 (E.D. Mich. Nov. 22, 2010) (finding a forensic pathologist qualified to give expert testimony on the issue of toxicology).

Of course, the admissibility of an expert’s testimony is not based solely on qualifications. “[W]hile an expert’s overwhelming qualifications may bear on the reliability of his proffered testimony, they are by no means a guarantor of reliability.” *Quiet Technology DC-8, Inc. v. Hurel-Dubois UK Ltd.*, 326 F.3d 1333, 1341 (11th Cir. 2003). The court turns to the reliability arguments.

b. PMR

Dr. Burton offers an opinion that postmortem toxicology results are not reliable for determining drug concentrations at time of death for a number of reasons, the most prevalent being the phenomenon of PMR. He opines that the medications measured in Ms. Thrash’s postmortem blood all exhibit PMR (Burton’s Dep. 71), though he concedes that he does not know to what degree. He concludes that postmortem drug concentrations cannot be used to demonstrate that Ms. Thrash was impaired by drug use when the fire in her apartment ignited. PMR, as explained by Dr. Burton, is the

redistribution of drugs in the blood after death, which can result in different levels of drug concentration in the organs, tissue or blood vessels as compared to levels in circulating (live) blood, and thus, in certain cases, postmortem drug concentrations will not accurately portray antemortem drug concentrations. (Burton's Dep. 39–40.) Dr. Burton contends that the presence of drugs can be identified through postmortem toxicology, but that postmortem toxicology cannot be used to determine the concentrations of drugs to any degree of reliability. (Burton's Report 9 (Doc. # 177-18).) Dr. Burton's opinion, according to Plaintiff, forecasts the lack of foundation of Dr. Kulig's opinion that Ms. Thrash was impaired.

Blair objects to Dr. Burton's methodology, arguing that his opinion that PMR renders toxicology testing on the recently deceased unreliable is flawed for numerous reasons, including his failure to cite peer-reviewed publications that condemn postmortem toxicology testing as unreliable, the lack of evidence that his PMR opinion is generally accepted by the toxicology community, and his lack of knowledge of the specific effect of PMR on some of the key drugs in Ms. Thrash's blood. Plaintiff responds with an affidavit from Dr. Burton, citing a host of publications, which he attests are peer-reviewed, and which lodge multiple criticisms against the validity of postmortem toxicology.

There seems to be no dispute among the parties' experts that PMR is a valid scientific theory. Defense expert, Dr. Kulig, acknowledges that PMR "is a well recognized phenomenon whereby drug concentrations can change, for a number of reasons, after death." (Kulig's Report 4; *see also* Kulig's Report 5 (PMR "does not mean that drug concentrations measured after death cannot be interpreted or are unreliable. They do need to be interpreted cautiously and in context.")).) It also appears that there is a consensus in the peer-reviewed literature and studies cited by the parties that there are some scientifically valid techniques to mitigate the effects of PMR. One technique is the use of peripheral blood in postmortem blood testing. (*See, e.g.*, Burton's Aff. ¶ 4.5.2 ("There is considerable evidence that the drug concentrations in peripheral blood samples are closer to the antemortem level than the concentration in cardiac blood." (citation omitted))).) The evidence in this case establishes, without dispute, that peripheral blood was used for testing, and no issue presently has been raised challenging the procedures used to draw and preserve the peripheral blood sample. This is not a case in which the methodology of testing postmortem blood for drug concentrations is being challenged on the basis that cardiac blood was used.

It has not been shown to this court, however, through the proverbial battle of the experts, that there is a consensus among the scientific community as to the effects

of PMR on the drug concentrations at issue in this case. On the present record, however, Dr. Burton is qualified and has laid a sufficient foundation of reliability to testify about PMR and its potentially negative effects on blood testing of drug concentrations in cadavers and to criticize the postmortem toxicology readings on drug concentrations measured in Ms. Thrash's blood. The court reserves ruling for trial context as to the precise parameter of his allowable testimony. At this stage, however, Blair's motion to exclude is due to be denied.

c. Drug Impairment

Dr. Burton also opines that, even if the jury considers the postmortem toxicology readings as to drug concentrations in Ms. Thrash's blood, the results show that all of the measurable drugs were at or below therapeutic concentrations, making it unlikely that Ms. Thrash was impaired. Blair argues that Dr. Burton's methodology underlying this opinion is demonstrably flawed because Dr. Burton made critical mathematical errors in the drug-concentration unit conversion, and that these errors render his opinion unreliable and useless. According to defense expert (Dr. Robinson), Dr. Burton miscalculated the concentration of Carisoprodol, Meprobamate, Hydrocodone, Diphenhydramine, and Zolpidem by erroneously "mov[ing] the decimal point three places to the left" when making his conversions. (Robinson's Dep. 78–80.) Dr. Robinson opines that the correct conversions reveal

high therapeutic levels of all the measurable drugs, except Hydrocodone. (Robinson's Dep. 81–82.)

In his response, Plaintiff represents that “Dr. Burton concedes that he miscalculated the drug levels in Ms. Thrash's system.” (Pl.'s Opp. 56 (Doc. # 194).) Based upon Dr. Burton's concession, Blair's motion to exclude (Doc. # 174) is due to be granted as to Dr. Burton's testimony that the drug concentrations measured in Ms. Thrash's postmortem blood were at or below therapeutic concentrations.

2. Bill Harris

Bill Harris has served as the Lee County coroner since 1999. As coroner, his job is to determine the cause and manner of death on all unintended deaths that occur in Lee County. In Ms. Thrash's case, he determined that her death was caused by thermal burns and that the manner of her death was accidental. These opinions are not challenged.

At his deposition, however, Mr. Harris also offered opinions on the cause and origin of the fire, an inquiry undisputedly distinct from the cause and manner of death. Blair challenges those opinions in its *Daubert* motion, arguing that Mr. Harris is not qualified to render such opinions and that he does not employ a scientifically valid methodology for his opinions. Plaintiff responds that Mr. Harris will not offer any expert opinions on the source and origin of the fire. Based upon Plaintiff's

concession, Blair's motion to exclude (Doc. # 174) is due to be granted as to any testimony from Mr. Harris on the source and origin of the fire.

3. *James Munger*

James Munger has an associate degree in fire science, and a doctorate in occupational safety and health engineering. He has received certifications from the Alabama Fire College and Personnel Standards Commission, the Fire Protection Specialist Certification Board, and the National Association of Fire Investigators in areas pertaining to fire prevention, fire investigation, and explosion investigation. He has served as a member of the adjunct faculty of the National Fire Academy in Emmitsburg, Maryland, for twenty-eight years, developing and instructing courses in various aspects of fire protection. Dr. Munger also is a former Deputy State Fire Marshal for the state of Alabama, and he currently is the president of a consulting firm that specializes in "fire protection, code consulting and fire loss analysis" and a partner in a fire protection engineering firm. He also has authored several articles for publication in the field of fire protection and investigation, as well as several texts for the National Fire Academy.

Dr. Munger offers three opinions that are the subject of Blair's *Daubert* challenge. The first pertains to testimony about the cause and origin of the fire. The second is that the level of Ms. Thrash's carboxyhemoglobin (15%) is consistent with

the fire in the sofa being secondary to the burning of Ms. Thrash's robe. The third pertains to his opinions that the videos he reviewed showed "rapid" flame spread and "easy" ignition of the Blair chenille robe. Those opinions and the corresponding challenges are addressed in turn.

a. Cause and Origin

Mr. Munger offers proposed expert testimony on the cause and origin of the fire.⁹ He opines that there were two origins of the fire. The initial origin was in the kitchen at the stove with the ignition of Ms. Thrash's robe after coming in contact with the left front burner. The sofa, according to Mr. Munger, was a secondary origin. The front burner of the gas stove was the source.

Mr. Munger explains that he formulated his opinion based upon the standards set forth by the National Fire Protection Association in its publication NFPA 921: *Guide for Fire and Explosion Investigations*. The parties do not dispute that NFPA 921 is an accepted methodology for the investigation and analysis of fires and explosives. *See Tunnell v. Ford Motor Co.*, 330 F. Supp. 2d 707, 725 (W.D. Va. 2004) (observing that many courts have recognized NFPA 921 as "a peer reviewed and generally accepted standard in the fire investigation community") (quoting

⁹ Cause and origin sometimes is referred to in the evidence as "source and origin." Origin is defined as the "general location where a fire began." (Munger's Aff. 13.)

Travelers Prop. & Cas. Corp. v. Gen. Elec. Co., 150 F. Supp. 2d 360, 366 (D. Conn. 2001))).

However, Blair seeks to exclude Mr. Munger's testimony on the grounds that he misapplied NFPA 921 standards and did not apply the methodology (NFPA 921) reliably to the facts of the case. Blair argues that Mr. Munger improperly determined the origin of the fire before he determined a source, disregarded NFPA 921 methodology by using a faulty process of elimination ("negative corpus") to define the stove as the ignition source,¹⁰ and failed to properly investigate other potential causes of the fire. Plaintiff responds that Blair's criticism is unwarranted, that Blair misinterprets portions of NFPA 921, and that Mr. Munger adequately explains in his report, deposition and affidavit his strict adherence to NFPA 921's procedures.

At this time, Blair has not demonstrated that Mr. Munger misapplied the NFPA 921 guidelines in such a way to render his methodology unreliable. In his affidavit, Mr. Munger cites various guidelines of the NFPA 921 that demonstrate that his methodology in forming his opinions as to the source and origin of the fire were

¹⁰ Section 18.6.5 of NFPA 921 provides that "[t]he process of determining the ignition source for a fire, by eliminating all ignition sources found, known, or believed to have been present in the area of origin, and then claiming such methodology is proof of an ignition source for which there is no evidence of its existence, is referred to by some investigators as 'negative corpus.'" Negative corpus has typically been used to reach conclusions that incendiaries or arson was employed as the source for otherwise unexplained fires. This methodology has been rejected by the standards set forth in NFPA 921.

consistent with NFPA 921. In particular, he cites § 18.1.3 (addressing the scenario when there is no physical evidence of an ignition source), § 18.2.3 (addressing point and area of origin determinations where a single point cannot be identified), and § 18.1.5 (addressing the role of ignition sequence in determining fire cause). He also adequately explains how the process of elimination plays a legitimate and integral role under NFPA 921 for selecting a final hypothesis (*see* Doc. # 194, at 28–29), and that “negative corpus” is a different concept from the process of elimination outlined in NFPA 921. Based on the evidentiary submission pertaining to Mr. Munger’s opinions, Blair has not persuaded the court that Mr. Munger’s method of examining possible ignition sources is contrary to NFPA 921.

As set forth by the standards in *Daubert* and Rule 702, the testimony of Mr. Munger as to the origin and cause of the fire qualifies as reliable testimony. Mr. Munger has at least good grounds for his conclusions. Blair’s various concerns about Mr. Munger’s application of NFPA 921 methodology are properly reserved for cross-examination. The motion to exclude in this regard, therefore, is due to be denied.

b. Fit Between Expert Opinion and Facts

Blair argues that Mr. Munger’s opinion that the fire was caused when a flame at the stove ignited the robe is speculative, given the absence of fire damage to the

stove, photographic or testimonial evidence of a fire at the stove, or evidence showing burned remnants of Mrs. Thrash's robe in the kitchen. This is one example, according to Blair, as to why there are too many analytical gaps between Mr. Munger's opinion and the actual facts.

To demonstrate that the expert testimony is relevant, there "must be an appropriate 'fit' with respect to the offered opinion and the facts of the case." *McDowell v. Brown*, 392 F.3d 1283, 1299 (11th Cir. 2004). "For example, there is no fit where a large analytical leap must be made between the facts and the opinion." *Id.*

In his report, deposition testimony, and affidavit, Mr. Munger details that he meticulously followed NFPA 921's scientific method in formulating his opinions. He garnered facts about the fire by examining the scene of the fire, and by reviewing photographs and reports, statements, deposition testimony, the fire behavior of the Blair robe material, observations of the fire department personnel as to the condition of the stove, and information gathered about Ms. Thrash's routine activities. The facts and data collected were analyzed in the context of Mr. Munger's knowledge, training, experience, and expertise. He next developed a hypothesis based on the empirical data, and not on speculation. That hypothesis, as stated, was that the initial ignition took place at the stove while Ms. Thrash was cooking breakfast; the ignition source was the left front burner; and the first material ignited was the robe. The ignition of

the sofa was secondary and occurred as Ms. Thrash, while on fire, traveled past the sofa. Moreover, as to the absence of fire damage in the kitchen, Mr. Munger hypothesized that Ms. Thrash took the initial burning materials (the robe) out of the kitchen and into the living room. He then tested his hypothesis using fire modeling and conducted a carbon monoxide exposure analysis, which he concluded demonstrated a carbon monoxide (“CO”) level consistent with the CO that would be produced from the burning robe all by itself. Mr. Munger performed this testing to ensure that his hypothesis could withstand a careful and serious challenge. Based on that testing, he concluded that there were no other causes consistent with the data. In sum, the record is sufficient to demonstrate the requisite fit.

c. Mr. Munger’s Analysis of CO levels

Mr. Munger used the Stewart and Coburn-Forster-Kane (“CFK”) equations to determine the level of CO one would expect to find in Ms. Thrash had the robe ignited first, versus if the sofa had ignited first. To obtain CO data to input into these equations, Mr. Munger ran a fire model, known as the Fire Dynamics Simulator (“FDS”). He also relied on an article titled, “Full-Scale Burning Behavior of Curtains and Draperies,” by L. Dow Moore, for CO data.

Blair contends that Mr. Munger’s opinion related to Ms. Thrash’s CO level is unreliable for three main reasons: first, that the FDS model that Mr. Munger

employed gives inaccurate CO results because it does not account for specific inputs related to Ms. Thrash; second, that the CO calculations from the Moore article are inapposite and inapplicable to the present case; and third, that the CFK equation cannot accurately predict the CO levels in an individual analogous to Ms. Thrash. Plaintiff argues that these arguments lack merit, and the court agrees.

First, as pointed out by Mr. Munger, NFPA 921 adopts the FDS Manual and the CFK equation as reliable and valid methods to test a hypothesis on the source and origin of a fire. (Munger's Aff. 18–19 (quoting NFPA 921, §§ 23.10.8, 23.10.8.2, 23.10.8.2.2).) Additionally, Mr. Munger attests that the CFK formula is “contained in the high[ly] recognized Society of Fire Protection Engineers Handbook of Fire Protection Engineering.” (Munger's Aff. 19.) Based upon the FDS's recognition by the NFPA 921, as well as the testimony about how Mr. Munger managed this model, there are good grounds to conclude that Mr. Munger's employment of the FDS test does not fall short of the expert standards established in *Daubert* and Rule 702.

Second, the court finds that the discrepancy between the CO data from the Moore article and the CO data in the present case is an appropriate issue for cross-examination, but does not warrant exclusion of this evidence. Mr. Munger's affidavit reveals that he has a basis to conclude that the differences in 100 ppm of CO on the 100% cotton worn by Ms. Thrash and the cotton blend referenced in the Moore article

does not alter the reliability of his fire modeling. (Munger's Aff. 22.) Whether his conclusion is correct is a matter for cross-examination, since the discrepancies go to the weight of his conclusions. Blair has not presented sufficiently compelling evidence that the Moore article conclusions are so inapposite to the present case that they render Mr. Munger's modeling unreliable and invalid to the point of exclusion.

Third, based upon a review of Mr. Munger's affidavit, indicating, among other things, that the Society of Fire Protection Engineers has approved the use of the CFK equation in predicting CO levels in humans, and the affidavit testimony Mr. Munger provided to demonstrate the steps he took to reliably model and conservatively estimate the CO levels, the court finds that Blair's critique of the CFK equation is appropriate for cross-examination, but is not sufficient for exclusion. In sum, Mr. Munger will be permitted to testify about Ms. Thrash's CO levels and the conclusions he reached, and Blair will be allowed to challenge those conclusions at trial.

d. Flammability of the Robe

Finally, Blair argues that Mr. Munger must be excluded from providing any testimony about the flammability of the robe because he admits that he is not an expert in that field. (*See* Munger's Dep. 17.) Of particular concern to Blair is Mr. Munger's testimony that he reviewed the videos on flammability testing conducted on exemplar robes in accordance with Flammable Fabrics Act (*i.e.*, the Govmark testing), and that

the testing showed “rapid” flame spread and “easy” ignition of the cotton robe. In response, Plaintiff concedes that Mr. Munger will not be offering any design opinions related to the flammability of the robe. Plaintiff argues, however, that Mr. Munger is qualified to comment on the testing videos he reviewed and to consider it, along with other empirical data, in forming his opinion about the source and origin of the fire.

Based upon careful consideration of the arguments, Blair’s motion to exclude any testimony from Mr. Munger in which he would offer design opinions related to the flammability of the robe is due to be granted, given Plaintiff’s concession. The motion to exclude is due to be denied, however, to the extent that Mr. Munger will be permitted to testify that he watched the videos, but ruling will be reserved for trial context on Mr. Munger’s opinion of what the videos demonstrated to him.

V. CONCLUSION

Based on the foregoing, it is ORDERED as follows:

(1) Plaintiff’s motion to exclude (Doc. # 169) is GRANTED as to testimony from Dr. Boudreau that Ms. Thrash’s legal use of several prescribed and over-the-counter drugs may have played a part in her death by hindering her ability to react to the fire that took her life.

(2) Plaintiff's motion to exclude (Doc. # 172) is GRANTED as to testimony from Mr. Canter as to the cause and origin of the fire, but otherwise is DENIED.

(3) Plaintiff's motion to exclude (Doc. # 170) is GRANTED as to testimony from Dr. Robinson that Ms. Thrash was dizzy, sleepy and confused to the point of being unable to think rationally and to react promptly to the fire, but is otherwise DENIED.

(4) Plaintiff's motion to exclude (Doc. # 171) is GRANTED as to testimony from Dr. Kulig pertaining to the degree of Ms. Thrash's impairment, but DENIED as to Dr. Kulig's opinion that Ms. Thrash was impaired by her medications such that her ability to prevent and react to the fire would have been slower and less effective.

(5) Blair's motion to exclude (Doc. # 174) is GRANTED as to testimony from Dr. Burton pertaining to the cause and origin of the fire and the robe's flammability, GRANTED as to Dr. Burton's testimony that the drug concentrations measured in Ms. Thrash's postmortem blood were at or below therapeutic levels, DENIED as to testimony about PMR and its potentially negative effects on postmortem blood testing of drug concentrations. The full parameters of that testimony is RESERVED for trial.

(6) Blair's motion to exclude (Doc. # 174) Mr. Harris's testimony is GRANTED as to any testimony from Mr. Harris on the source and origin of fire.

(7) Blair's motion to exclude (Doc. # 174) is GRANTED as to testimony from Mr. Munger as to design opinions related to the flammability of the robe, DEFERRED for trial on Mr. Munger's opinion as to what the flammability testing videos demonstrated to him, and otherwise DENIED.

DONE this 27th day of June, 2012.

/s/ W. Keith Watkins
CHIEF UNITED STATES DISTRICT JUDGE